

WHAT IS CLAIMED IS:

1. A communication network system comprising a plurality of communication terminals, each having first transmitting means and first receiving means, connected via a transmission channel, information being transmitted and received among said communication terminals through said first transmitting means and said first receiving means, at least two of said communication terminals being used as relay communication terminals, each of said relay communication terminals comprising:

second transmitting means for performing only one-to-one-type communication;

second receiving means for performing only one-to-one-type communication;

received-information relay means for transmitting information received from said first receiving means to said second transmitting means and for transmitting information received from said second receiving means to said first transmitting means;

relay-terminal-information transmitting means for transmitting to said first transmitting means terminal identification information of said relay terminal and terminal identification information of a terminal to which said relay terminal is providing relay services as relay

terminal information; and

relay terminal storage means for storing information of said relay terminal and another relay terminal and relay situations of the relay terminals from the relay terminal information received from said first receiving means,

wherein, upon discontinuing the relay services by the relay terminal which is providing the relay services, the presence or the absence of an available relay terminal is determined by referring to said relay terminal storage means, and if there is an available relay terminal, an instruction is provided to the terminal which is receiving the relay services to change the relay terminal.

2. A communication network system according to claim 1, wherein said relay-terminal-information transmitting means has a function of regularly transmitting the relay terminal information.

3. A communication network system according to claim 1, wherein, upon discontinuing the relay services by the relay terminal, the terminal which is receiving the relay services changes from the relay terminal to a subsequent relay terminal, and the subsequent terminal then stores received information until a connection is established with the terminal which is receiving the relay services.

4. A communication network system comprising a plurality of communication terminals, each having first transmitting means and first receiving means, connected via a transmission channel, information being transmitted and received among said communication terminals through said first transmitting means and said first receiving means, at least one of said communication terminals being used as a central relay communication terminal, and at least one of said communication terminals being used as a relay communication terminal, said relay communication terminal comprising:

second transmitting means for performing only one-to-one-type communication;

second receiving means for performing only one-to-one-type communication;

received-information relay means for transmitting information received from said first receiving means to said second transmitting means and for transmitting information received from said second receiving means to said first transmitting means; and

relay-terminal-information transmitting means for transmitting to said first transmitting means terminal identification information of said relay terminal and terminal identification information of a terminal to which

said relay terminal is providing relay services as relay terminal information,

said central relay communication terminal comprising relay-terminal storage means for storing information of said relay terminal and another relay terminal and relay situations of the relay terminals from the relay terminal information received from said first receiving means, thereby designating an available relay terminal to a terminal which makes a request to provide the relay services.

5. A communication network system according to claim 1, wherein at least two of said first transmitting means and at least two of said first receiving means are provided.

6. A communication network system according to claim 1, wherein at least two of said second transmitting means and at least two of said second receiving means are provided.

7. A communication network system according to claim 1, wherein at least two of said first transmitting means and at least two of said first receiving means are provided, and at least two of said second transmitting means and at least two of said second receiving means are provided.

8. A communication network system comprising a

plurality of communication terminals, each having first transmitting means and first receiving means, connected via a transmission channel, information being transmitted and received among said communication terminals through said first transmitting means and said first receiving means, at least two of said communication terminals being used as relay communication terminals, each of said relay communication terminals comprising:

second transmitting means for performing only one-to-one-type communication;

second receiving means for performing only one-to-one-type communication;

third transmitting means for performing only one-to-N-type communication;

third receiving means for performing only one-to-N-type communication;

received-information relay means for transmitting information received from said first receiving means to said second transmitting means and to said third transmitting means, and for transmitting information received from said second receiving means to said first transmitting means and to said third transmitting means, and for transmitting information received from said third receiving means to said first transmitting means and to said second transmitting means;

relay-terminal-information transmitting means for transmitting to said first transmitting means terminal identification information of said relay terminal and terminal identification information of a terminal to which said relay terminal is providing relay services as relay terminal information; and

relay terminal storage means for storing information of said relay terminal and another relay terminal and relay situations of the relay terminals from the relay terminal information received from said first receiving means,

wherein, upon discontinuing the relay services by the relay terminal which is providing the relay services, the presence or the absence of an available relay terminal is determined by referring to said relay terminal storage means, and if there is an available relay terminal, an instruction is provided to the terminal which is receiving the relay services to change the relay terminal.

9. A relay terminal for use in a communication network system which comprises a plurality of communication terminals, each having first transmitting means and first receiving means, connected via a transmission channel, information being transmitted and received among said communication terminals through said first transmitting means and said first receiving means, one of said

communication terminals being used as said relay terminal, said relay terminal comprising:

second transmitting means for performing only one-to-one-type communication;

second receiving means for performing only one-to-one-type communication;

received-information relay means for transmitting information received from said first receiving means to said second transmitting means and for transmitting information received from said second receiving means to said first transmitting means;

relay-terminal-information transmitting means for transmitting to said first transmitting means terminal identification information of said relay terminal and terminal identification information of a terminal to which said relay terminal is providing relay services as relay terminal information; and

relay terminal storage means for storing information of said relay terminal and another relay terminal and relay situations of the relay terminals from the relay terminal information received from said first receiving means,

wherein, upon discontinuing the relay services by the relay terminal which is providing the relay services, the presence or the absence of an available relay terminal is determined by referring to said relay terminal storage means,

and if there is an available relay terminal, an instruction is provided to the terminal which is receiving the relay services to change the relay terminal.

10. A method for relaying information between a plurality of communication terminals in a communication network system, at least two of said communication terminals being used as relay communication terminals, said method comprising:

a first transmitting step of transmitting information received from one communication terminal to another communication terminal;

a second transmitting step of transmitting terminal identification information of said relay terminal and terminal identification information of a terminal to which said relay communication terminal is providing relay services as relay terminal information;

a storage step of storing information of said relay terminal and another relay terminal and relay situations of the relay terminals from the relay terminal information transmitted in said second transmitting step;

a determining step of determining the presence or the absence of an available relay terminal by referring to the relay terminal information stored in said storage step when said relay terminal discontinues the relay services; and



a providing step of providing an instruction to the terminal which is receiving the relay services to change the relay terminal.